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Remarks

Applicant respectfully requests reconsideration of this application. Claims 1-44 have been canceled. Claims 45-72 have not been further amended. None of the claims have been allowed.

Information Disclosure Statement

Applicant wishes to disclose the status of other applications that may be considered related to the present application, as follows: serial no.: 10/315,624 (issued as US 7,684,752; 03/23/2010); serial no.: 10/315,694 (issued as US 7,493,078; 02/19/2009); serial no.: 10/367,178 (issued as US 7,593,361; 09/22/2009); serial no.: 10/608,594 (Final Office Action rejecting all pending claims mailed 06/08/2010); serial no.: 10/889,326 (Final Office Action rejecting all pending claims mailed 06/09/2010); serial no.: 10/367,197 (issued as US 7,590,084; 09/15/2009); serial no.: 10/315,788 (issued as US 7,558,525; 07/07/2009); serial no.: 10/395,749 (Appeal Brief filed 09/29/2008); serial no.: 10/407,445 (issued as US 7,567,527; 07/28/2009); serial no.: 11/800,543 (issued as US 7,741,665; 05/05/07); and serial no.: 10/435,005 (issued as US 7,215,660; 05/08/07).

Traversal of Claim Rejections Under 35 U.S.C. § 103(a)

Claims 45-72 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lau in view of Heinonen et al. (US 6,968,153 "Heinonen") and Lau in view of Oura (US 6,115,369 "Oura"). Applicant respectfully traverses this ground of rejection.

The distinctions between the cited prior art references and the claimed subject matter have been discussed at length in Applicant's previous amendments and arguments. On page 4 of the Final Office Action mailed 06/08/2010 the Examiner concedes that Lau does not disclose the claimed element of a third

transceiver. However, the Examiner maintains his rejection of claims 45-72 based on the same combination of references previously cited, interpreting the claim limitations as,

"... relating to the process of extending a wireless LAN through three multi-protocol transceivers operating in different frequency bands, as taught in Figure 1C of Heinonen. More specifically, Heinonen teaches an apparatus, method and system for a Bluetooth™ repeater, which comprises pairing the transceiver with an IEEE 802.11a (first frequency band, 5GHz, at a data rate of 11Mbps or greater), b (second frequency band, 2.4GHz) and g transceiver to extend the radius the of [sic] repeaters range (Referring to Figure 1C, see column 4, lines 4-21.)"

The Examiner then concludes that it would have been obvious to implement the multiprotocol transceivers of Heinonen in the channel shifting RF repeaters of Lau "in order to provide bandwidth adequate for multimedia over an expanded infrastructure backbone for transmission distances beyond the capability of 802.11, that supports high-data-rate universal radio interfaces, which comply with the well-known standard of IEEE 802.11a, for almost any type of data as taught by Lau (See column 3, lines 14-27 and column 4, lines 41-52.)."

Continuing, the Examiner further agrees that "Lau does not disclose the first transceiver receiving data in an odd time interval and a second transceiver transmitting data in an even time interval, the second transceiver not transmitting during the odd time intervals." (Page 5, Final Office Action mailed 06/08/2010) To overcome this deficiency the Examiner interprets the claimed invention as a method or device comprising a first access point, which receives on a first time slot and transmits on a second time slot, and a second access point, which receives on a second time slot and transmits on a first time slot. The Examiner concludes that Oura's teaching of a Time Division Duplex communication system "is equivalent to Applicant's instant invention that wireless [sic] repeats calls across time slots utilizing the same frequency."

As explained in Applicant's previous responses, Lau does not teach a repeater that wirelessly receives and re-transmits on the same frequency channel in an odd/even time interval pattern as part of a chain of transceivers. On the contrary, Lau not only discloses that his repeaters are receiving and transmitting *simultaneously*, but that multiple repeaters are transmitting in *same* time interval on the *same* channel. For example, in column 7, lines 32-33, Lau states, "Repeaters receiving this signal repeat it on CH2 during timeslot 1." Not only is this contrary to the language of the subject claims, it teaches away from creating the chain of non-interfering, channel-efficient, high-bandwidth, high-reliability repeaters of the instant invention. The reason why is because if multiple repeaters are all within maximum bandwidth range of a given signal, their destination receivers in a chain of repeaters will be within the interference range of the multiple repeaters (see Figs. 2A, 2B, 3, 5, 6, and 8 of Applicant's disclosure). It is well-known by practitioners skilled in the art that repeaters need a clear channel for retransmission in order to achieve high bandwidth (or potentially even operate at all). Lau explicitly acknowledges this constraint and proposes some solutions to address it, e.g., Col. 5, lines 65-67 through Col. 6, lines 1-6, which states:

"In other embodiments, the repeaters can measure signal strength and decide for each signal, whether to repeat the CH1 signal on CH2, or to repeat a CH2 retransmission on CH3. Other possibilities include sensing the source and/or destination of the signal and performing an appropriate repetition. The receiving T/R modules can select either a CH2 signal or a CH3 signal for demodulation, and in some embodiments this selection is expanded to include a CH1 signal.

But none of Lau's proposed solutions teach the limitations of the subject claims. Rather, Lau teaches away from the claimed invention by having all repeaters retransmitting immediately on arbitrary channels, regardless of network topology. Indeed, a key utility of the claimed subject matter is overcoming the low reliability,

low bandwidth, inefficient channel use that arises with prior art approaches to repeating, such as those taught by Lau.

Applicant respectfully submits that the Examiner's interpretation of the claimed invention is also contrary to the language of the subject claims. Claim construction analysis always begins with the words of the claim. See *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582, (Fed. Cir. 1996). That is, the claim language defines the bounds of claim scope. *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 619-20 (Fed. Cir. 1995); *Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998) ("[T]he claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim."). Thus, the language of the claim frames and ultimately resolves all issues of claim interpretation. *Abtox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023 (Fed. Cir. 1997).

Under a proper claim construction, Lau fails to teach the elements and limitations of the claimed invention. Indeed, both Heinonen and Lau fail to teach receiving and transmitting in odd/even time intervals using first and second transceivers.

Furthermore, Applicant contends that a skilled person would also have lacked motivation to attempt to combine Lau with either Heinonen or Oura since Lau specifically teaches that TDMA repeater approaches suffer from channel interference issues, with the implicit lack of reliability and loss of channel utilization efficiency, rendering the wireless channel inadequate to transmit real-time audiovisual content. Applicant therefore respectfully submits that a person of ordinary skill, upon reading the Lau reference, would be discouraged from attempting to implement a wireless repeater having first and second transceivers

that receive and transmit on the same frequency channel during odd/even time intervals.

Lau also teaches away from technologies that have transmission range, bandwidth and reliability limitations, which Bluetooth (as taught by Heinonen) certainly suffers from. Given Lau's disparaging remarks about technologies such as Bluetooth, Applicant respectfully submits that a person of ordinary skill in the art would have lacked any motivation to combine / modify Lau with Heinonen to arrive at the claimed subject matter. Furthermore, Applicant respectfully submits that such an ordinary practitioner would certainly have lacked any reasonable expectation of success at achieving the claimed invention in any such combination. Heinonen fails to provide any teaching that overcomes the inherent limitations of Lau.

Oura, aside from being non-analogous art, discloses that audio information is transmitted at the relatively slow data speeds of 384 kbps. (Column 4, lines 30-39) In contrast, Applicant discloses a wireless repeater transmitting data at a data rate of 11 megabits per second. Given the enormous difference in transmission rates and the completely different problems faced when transmitting content (e.g., video) at high data rates versus low data rate transmission (e.g., simple voice data), Applicant respectfully submits that a person or skill working in the field of wireless networks with repeaters would not consider mobile phone communication systems to be within the same field of endeavor as the claimed subject matter. Nor would such a person have a reasonable expectation of success at achieving data rates of 11 megabits per second by combining Oura's teachings with that of Lau and Heinonen.

With respect to the Examiner's contention that Oura's teaching of a Time Division Duplex communication system is somehow equivalent to Applicant's use of a first transceiver that receives data transmitted on a first channel of a first frequency band during odd time intervals, combined with a second transceiver that transmits the data at a data rate of 11Mbps or greater on the first channel of the first frequency

band during even time intervals, the second transceiver not transmitting during the odd time intervals, as recited, for example, in claim 45, Applicant respectfully disagrees.

A person of ordinary skill in the art would understand that combining Oura with Lau for the purpose of achieving the subject claims would lead to an inoperable result. One reason why is that Oura is designed very specifically to achieve a *single* repetition, not a chain of repetitions. A person of ordinary skill in the art attempting to install or use two or more of Oura's repeaters in a chain would understand that they would interfere with one another – rendering the system useless. Indeed, Oura specifically designed his protocol to accommodate a *single* repeater extension of a wireless network that may or may not be needed, *not* a chain of repeaters. In other words, by teaching a one repeater protocol, Oura teaches away from the concept of a wireless network comprising a plurality of repeaters arranged in a tree topology or chain for transmitting data at a high data rate from a source to a destination device.

If a person of ordinary skill attempted to construct a wireless network utilizing the alternated time slots taught in Oura's Fig 3A with more than one repeater, the result would be multiple repeaters, base stations and mobile stations all transmitting in interference with one another. Indeed, Oura's protocol appears to be specifically conceived in contemplation of just *one* repeater. The expectation is that there will be situations where the mobile device is in range of the base station, and thus there will be direct communications between them without interference by the repeater. Otherwise, the proposed protocol is simply wasteful of bandwidth.

A person of ordinary skill in the art would thus conclude that Oura's teachings are limited to a single repeater; that Oura's invention merely expands a mobile base station's coverage area by a single repeater in such a way that if the repeater is not present, direct communications can occur without requiring a change to the protocol. For example, in column 6, lines 25-33 Oura states:

"The mobile station B etc. can therefore make calls with the base station A in the same order regardless of whether or not the repeater 20 is present, i.e. when direct communication is possible with the base station A calls are made with the base station A in the conventional order but when direct communication with the base station A is not possible, calls can be made with the base station A using the same order via the repeater 20. As a result, the possible call area can easily be broadened."

In sum, Oura teaches away from: (1) utilizing more than one repeater in a wireless network; (2) structuring a protocol in such a manner as to avoid loss of bandwidth; and (3) having a protocol that adapts to a topology of multiple repeaters (Oura's protocol is inherently limited insofar as it is *fixed* by design to work whether there is a repeater there or not, a limitation which makes it impossible to implement a chain of repeaters).

Furthermore, Lau teaches away from the approach taken by Applicant by teaching a system and method that uses repeaters having multiple transceivers that transmit and receive *simultaneously* on different frequency channels. A person of skill reading Lau would definitely have been discouraged from attempting the claimed subject matter since both Lau and Oura teach away from Applicant's claimed subject matter. Such a skilled person would also have lacked any motivation to attempt to combine Lau with Oura since Lau specifically teaches that TDMA approaches are limited to a 1Mbps throughput, a rate that is adequate for a mobile phone system, but which is completely inadequate to transmit data at a data rate of 11Mbps.

Applicant therefore respectfully submits that a person of ordinary skill in the art would have lacked any reason to combine or modify the cited prior art references in the manner suggested by the Examiner. And that such an ordinary practitioner would have had no reasonable expectation of success at achieving Applicant's claimed invention in view of the contrary teachings of the cited references, as well as

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the inoperability of any combination of the references aimed at achieving a multi-repeater wireless network.

Double Patenting Rejection

Claims 45-72 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 7,593,361 in view of Heinonen.

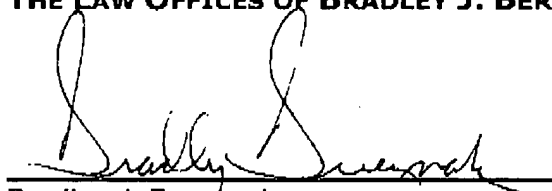
Applicant is submitting herewith a terminal disclaimer disclaiming the terminal part of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on the commonly-owned U.S. Patent No. 7,593,361. Applicant respectfully submits that the attached terminal disclaimer obviates the rejections on the grounds of nonstatutory obviousness-type double patenting.

Applicant respectfully submits that pending claims 45-72 are now in condition for allowance.

Please charge the terminal disclaimer fee of \$140 under 37 CFR 1.20(d) to our Deposit Account No. 50-2060. Please charge any shortages of fees or credit any overcharges of fees) to our Deposit Account No. 50-2060.

Respectfully submitted,
THE LAW OFFICES OF BRADLEY J. BEREZNAK

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Bradley J. Bereznak
Attorney for Applicant
Registration No. 33,474